Conservation and Development*

by

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INTRODUCTION

There are three great challenges that face every nation in the modern world: first, how to ensure the greatest welfare for its people; second, to use the resources of Nature wisely; and third, to do these things in such a way that they contribute to a solution which makes sense for the whole world. The first has been the clear challenge and objective of good government through the ages, but the importance of the second has only recently been appreciated.

Although there is room for disagreement about exactly how critical the situation may be, the present interdependence of nations for resources, the growth of world population, and the increase of expectations everywhere, have made it clear, in a very real and immediate sense, that the availability of resources will impose a limit on the well-being that people may expect to attain. Moreover, if each nation attempts to meet these two challenges in its own individual and independent way, the immediate effect may be an increase in world tensions; consequently a high degree of international cooperation is needed, such as the world has never previously experienced.

To meet these challenges requires clear and honest thinking, and firm and well-planned action. Clear thinking is important for many reasons, but particularly because the world has become the prisoner of its own words. By raising emotions, certain catch-phrases have come to exercise an excessive influence on attitudes and policies, and, often, too little thought is given to the realities that lie behind: examples are 'development' and 'underdevelopment', 'environmental quality', and 'economic growth'.

What do we mean by the *wise use of natural resources*? When resources were abundant, Man could afford to be prodigal; the local dissipation of resources did not seem to matter very much. If soil lost its fertility or was washed away, people moved elsewhere. If one mineral was exhausted, they found another source or substituted something else that would do as well or better. It has been said, with some justification, that 'every new source from which Man has increased his power over the Earth has been used to reduce the prospects of his successors' (Darlington, 1969). Man is now 'far too clever to be able to survive without wisdom' (Schumacher, 1973).

The rise of technology has changed the face of the Earth. It has led to great improvements in health and nutrition almost everywhere—for at least a proportion of the people. It has also led to fantastic increases in the possession of material goods and wealth in some parts of the world, and to serious psychological stress and social disruption. So mixed is the result, that we must try to take the best and reject the bad. The success of technology largely depended on using natural capital as though it were income; and, so far, we have got away with it. It is a strange paradox, pointed out by Schumacher (1973), that it is the present economic system itself which is driving us to commit this affront against the principles of economics. For the most important banks of capital on Earth—including the vast majority of natural resources, the self-regenerating capacity of clean air, water, and soil, and the resources of human nature itself—are treated as 'free goods', while the fact that they are being permanently dissipated or devalued is, for all practical purposes, ignored.

Where, then, does wisdom lie? Is it not in learning to treat these natural resources as capital, to be duly husbanded and respected, and in designing and operating a system which obtains the greatest possible lasting human benefit from each unit of resource that is used—per hectare of land, per tonne of steel, or per litre of water? Much of the knowledge, experience, and skill, needed to use resources in this rational way, is already available. Indeed two of the

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most difficult remaining questions are to decide what is meant by 'the greatest human benefit', and what should be done when the conservation of one resource appears to compete or conflict with the conservation of another (Poore, 1974).

DEPENDENCE ON NATURAL RESOURCES

We can all recognize the natural resources on which we depend: energy, minerals, soil, water, and air; the great variety of animals and plants; and the immense innate resources of the human race itself. We may put different values on each of these because of the different cultures in which we have been reared, or because the pressing problems of the day may make one of them, perhaps food or water, of overwhelming immediate importance. But in the interests of the future we need to retain the capital of all of them. Would it not have been a serious loss for the modern world if primitive Man had accidentally exterminated the wild progenitors of rice?

I shall only use *renewable* natural resources as an example; rather similar considerations can be applied to the others. The goods and services that we produce from the land include food and other natural products obtained from domesticated and wild plants and animals; also needed are a steady and consistent yield of good water, and an environment that meets the varied physical and psychological needs of Man. In a world which is becoming increasingly urban and crowded the need, indeed the necessity, for open spaces is being recognized more and more—to provide the possibility for solitude and the spiritual solace that beautiful places can provide. Although material requirements may seem from time to time to be of overwhelming importance, the psychological and spiritual ones are nevertheless fundamental; for, without attention to them, the very fabric of society will rot.

The tasks in relation to renewable resources are, then:

(*a*) to get from them the greatest present benefit;

(*b*) to do so in a flexible way so that, as far as possible, the kind of use may be changed in the future to meet new requirements; and

(*c*) to guard intact the stock of natural capital—in particular soil, the potential of catchments to yield a reliable supply of good water, and the conditions in which animals and plants can continue to exist and evolve as a resource *inter alia* of genetic variation for the future.

To accomplish all this is not easy, for these objectives can and do compete and conflict with one another, while measures taken with the best of motives may do great ultimate damage. Thus measures to correct food shortages may lead to catastrophic erosion if slopes are cultivated that are too steep, while the offering of new watering-points for stock may provoke serious overgrazing, and irrigation may lead to permanent loss of land through salinization. Examples of this kind of effect are legion. The most dangerous and insidious cause of environmental damage is, however, economic. This is because good land-use, of a quality which maintains the capital of the land, is not necessarily profitable; and what *is* profitable may lead to serious and lasting loss of natural capital.

Profitability is likely to remain for a long time the main measure of what is locally considered as 'right'. As long as this attitude persists, the wise use of natural resources can only be brought about by making the increase or decrease of natural capital a significant item in the economic equation; or, alternatively, by government intervention to ensure that wise land-use takes precedence over what is merely profitable. Of course, these two themes do not always conflict. Good land-use can be very profitable but, where it is, there is no temptation to abuse the land and, therefore, no problem.

If natural capital is not to be squandered further, those who determine national land-use policies must have a real understanding of the principles of wise environmental management. It was for this purpose that IUCN, in collaboration with the Conservation Foundation, of Washington, D.C., commissioned the book *Ecological Principles for Economic Development* by Dasmann *et al.* (1973), and have followed this with a number of regional and other meetings devoted to formulating ecological guidelines for development in cooperation with UNEP, UNDP, FAO, UNESCO, and others.*

RATIONAL USE NECESSARY

If continued and often increased use is to be made of natural resources without depleting capital, the following are among the measures which are necessary:

(*a*) Those who decide national policies must be aware of the real nature of the problem and must practise the outcome of this awareness;

(*b*) The allocation of land to various uses must be planned with great care, and firm provision must be made, as an essential and integral part of this planning, for those uses of the land which are essential to preserve living capital but which may

* Several of these conferences etc. have been, or are being, reported on in our Conferences & Meetings section. They include those on tropical forest areas, held in Caracas, Venezuela, in February 1974 (*see* our Vol. 1, No. 3, p. 236), and Bandung, Indonesia, in May 1974 (*see* our Vol. 1, No. 4, p. 312); that on natural and cultural resources in Central America, held in San José, Costa Rica, in December 1974 (*see* our Vol. 2, No. 3, p. 234); that on marine resources etc. of the northern Indian Ocean region, held in Tehran, Iran, in March 1975 (*see* p. 313 of this issue); and that on the management of natural resources in south-west Asia, held in Persepolis, Iran, in May 1975.—Ed.

not appear immediately profitable (Doxiadis, 1975). This means *inter alia* the protection of a reasonable sample of all natural ecosystems and of the plants and animals which they contain, and of the habitats where there are concentrations of endemic species of plants and/or animals. It is mainly in this way that genetic resources can be preserved for the future: botanical gardens and seed-banks (Thompson, 1975), and living collections of animals, are a useful complement but no substitute;

(*c*) The use of produce from forests, fisheries, pastures, and water catchment areas, in such a way that the potential of the land or water to produce a lasting sustained yield is not impaired; and

(*d*) The planning of developments in such a way that they do not, in any circumstances, reduce the natural capital—for example by causing erosion, by producing a damaging degree of pollution, or by exterminating species or natural communities.

In practice, many areas may already be suffering from past misuse and it may be necessary to relax pressure on them to allow them to recover; it may even be desirable to protect completely some areas which it has been customary to use. If calculations of cost and benefit are devised in such a way that the enhancement of capital which results is fully represented, the justification for protective actions such as these will be clear; but, even so, such actions may well be unpopular, and it will require political skill to explain the reasons for them in a convincing way. Unless the situation is very serious, however, the relaxation of pressure in one part can be linked, and should be seen to be linked, with measures to intensify use and increase productivity elsewhere—to compensate for any local hardship. Of course the intensification should only take place in areas that are potentially fertile and where this can be done without risk of damage.

Although well-planned specialization and intensification are usually advantageous, there is one potentially dangerous consequence—it reduces flexibility. Moreover there is a temptation to push specialization and efficiency too far. The environment in which we live is far from constant: external conditions, such as climate, fluctuate irregularly. If the use of land, or any other human activity, becomes highly specialized, or is pushed to the limit of what is possible under one set of conditions, it becomes particularly vulnerable to outside influences.

It is in this matter of specialization that the conservation of renewable and non-renewable resources meet on common ground. Intensive use often depends upon a high degree of capitalization, and indirectly on a high input of energy. Indeed modern intensive agriculture uses great quantities of energy, and uses it inefficiently. The cost of this will certainly increase as time goes on, and supply is politically vulnerable. It would therefore be only prudent, as well as a means of conserving fossil fuels, to use wherever possible methods that do not depend on imported sources of energy—and use whatever means are available to harness renewable sources of energy. These include solar energy (Bockris, 1974; Neilsen, 1975; Meinel & Meinel, in press), nuclear fusion (Hirsch & Rice, 1974), wind (Bockris, 1975), and various possibilities in the Earth and seas.

In many cases, no doubt, mechanized intensive agriculture will be necessary. But, with imagination and skill, there may be developed other ways which use the ingenuity and unique abilities of Man at a human scale—in the intermediate technology of Schumacher (1973)—which, in the East, may often be already there and ready to be adapted.

ENVIRONMENTAL QUALITY AND DEVELOPMENT

What do we mean by 'environmental quality' and the 'greatest benefit to man'? Environmental quality is sometimes conceived in a narrow sense—clean air and water, freedom from noise, reserves for wildlife, beautiful scenery, and empty spaces which all men, women, and children, may enjoy. These of course are important; but environmental quality surely has many other ingredients—including conditions in which people can live a full life and use all their innate potential to the full in what has been called simply 'the good life'. Where people lack the essentials—good health, enough to eat, and freedom from fear—the other ingredients are likely to be thought of as luxuries that can ill be afforded. Such an attitude is understandable. But men, fortunately, are not all alike. Before starting blindly in pursuit of certain objectives, those men who are wise would do well to consider what kind of life it is that they want to live and what kind of environment they want to have their children grow up in. The end should determine the means, and 'development' should be the process by which these ends are attained. In this sense, 'development' is among the most urgent of the needs of all countries in the world—but especially of those that are afflicted with widespread poverty, malnutrition, and disease.

Too often, however, development is conceived also in the narrow sense of following the path that has been pursued by the West, leading to an increased 'standard of living' and possession of material goods. One of the greatest challenges facing the undeveloped or so-called 'developing' countries is not to pursue blindly the course which has been followed in the West but, while using the best that the West has to offer, to adapt their own values and systems to construct a new future in keeping with their particular potentialities, capabilities, and other circumstances.

It is up to us all to persuade politicians and economists that these are true and lasting values; to be able and ready to pursue vigorous environmental policies; to avoid the temptation to pursue short-term advantages by taking a narrowly 'productive' view; and, by doing all these things, to make people aware of the real nature of environmental concern.

SUMMARY

Nations face three challenges in the modern world: to ensure the greatest welfare for their people; to make wise use of natural resources; and to do these things in such a way that they contribute to a solution that makes sense for the whole world. To face these challenges requires a high degree of international cooperation and a clear-thinking, unemotional approach.

Hitherto the bank of natural capital has been treated as though it were income; this is the antithesis of wisdom. In the future, natural resources should be used so as to get the greatest immediate benefit that is consistent with keeping open a range of choices and maintaining natural capital intact.

To be successful in this endeavour, ecological guidelines must be applied in the planning and use of natural resources. The depletion, or restoration, of natural capital, should be fully represented in calculations of costs and benefits, in order that what is good land-use is also seen to be profitable. Where the link between these two qualities is not evident, great political skill may be necessary in presenting proposals for the use or rehabilitation of natural resources. The final challenge is to reassess the values of societies and not to accept blindly those which have become customary —particularly if this has happened through their provision of short-term benefits.

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The United Nations Environment Programme: Changes at the Top

It has been announced by the Secretary-General of the United Nations that Maurice F. Strong, the driving-force *par excellence* of the 1972 United Nations Conference on the Human Environment and of its logical outcome, UNEP, will be relinquishing the Executive Directorship of that body at the end of this year to take up a key post in his native Canada, where we wish him all the success that he surely deserves. His remarkable energy and foresight, exhibited in establishing UNEP, were recently displayed more intimately to our readership in his article 'Progress or Catastrophe: Whither our World?' published in our Summer issue this year (pp. 83–8).

Despite other departures of senior personnel, UNEP seems to be advancing to take its rightful place of leadership in furthering the type and thrust of concerted international action which is so widely and urgently needed in our ailing world, and we earnestly hope that, now the course of scientific wisdom has been set, the next choice of top helmsman will ensure *due continuity* towards effective execution.

A Comment on our Guest Editorial

If, as ecologically-versed humanists, we may add a postscript to the superb Guest Editorial which occupies the opening two pages of this issue, it seems to us not only unenlightened (as its authors so effectively demonstrate) but also highly dangerous to go on repeating the 'prediction' of the world's human population doubling in 30 or so years (and, incidentally, continuing to double periodically thereafter). For such projections seem apt to lull people widely into a false sense of security – that all is well with the world and they can participate in a great breeding splurge with every prospect of a fine future for their children and grandchildren and so on *ad infinitum*!